

Education and Innovation Committee

From: David Watkins [REDACTED]
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To: Education and Innovation Committee
Subject: Submission to the Parliamentary Inquiry into Assessment of Senior Mathematics, Chemistry and Physics in Queensland Schools

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I am one of the dinosaurs mentioned – 66 years of age, educated in Queensland, underwent external assessment in the Scholarship Exam in Year 8 (after 9 years of primary school), Junior Exam at year 10, Senior exam at Year 12 and taught in Queensland until 1972 when we still had external exams. After that I taught in the New South Wales System, the ACT System and the Northern Territory which used the external matriculation South Australian System in Year 12. I was a Mathematics HOD (called Senior Teacher in the NT) and a Deputy Principal for several years. I was the Senior Assessment Officer for Assessment Research in the NT and had responsibility for producing the external Year 10 Mathematics exam in the early 90s. I taught Measurement and Evaluation in the Education faculty of the Northern Territory University and I was a Chief Moderator for the NT doing the South Australian matriculation. I returned to Queensland and took up a teaching positions on the Sunshine Coast at Noosa District State High School and Chancellor State College. I have been a member of the Mathematics B panel for 10 years. I have had a wide experience and distinct impressions about the assessment of Mathematics and Physics as prescribed by the QSA.

Ensuring assessment procedures are supported by teachers

Since I have been at [REDACTED] (2006 to present) four of the most experienced teachers for Mathematics B and C and Physics no longer teach these subjects. One has moved to the middle school, one left teaching to stay at home, one bought a gardening business and I now teach Year 10 Mathematics and Science. Certainly in the case of the gardener and myself it was the QSA requirements that caused us to leave teaching Mathematics B, C and Physics. I have read the interview with Professor Ridd and believe that there lies the solution. A small component of external questions would help to moderate between schools and would greatly assist teachers but, most of all, would create a standard and a minimum requirement.

EMPSTs and ERTs and EEs have a credibility problems as well as an increased setting and marking load. They take away valuable time required to teach content which is evident when many teachers do not finish the course requirements. This is so evident in assessment panels and the QSA line always seems to be “the schools know best.”

Student participation levels

The current assessment practices, and the resultant teaching methods, have seriously damaged the reputation of Mathematics and Physics in Queensland schools amongst students (and many teachers). When one studies at Masters level, or indeed honours level, at University, there is an expectation of doing research. When this occurs there is a solid basis on which to establish this research and experience to create a research thesis. Most students in high school in Queensland lack the knowledge base to create even a minor research project, yet they are expected to do so. The students in Queensland do not have the Junior School knowledge base that is evident interstate. It could be interesting for your committee to obtain a level 1 external Mathematics paper from the NT from the early 90s. The Northern Territory does not perform well in NAPLAN but it does not try to exclude students to the extent that Queensland seems to do. They have a large indigenous community which, historically, are challenged in MAPLAN type assessment. The simple reality is that students who like, and are good at, Mathematics and Physics, quite often, do not appreciate having to do EMPSTs and ERTs and EEs and the teachers are forced to assess in a manner which does suit these students. The facts about student participation are obvious; the reasons seems equally obvious to many of the teachers trying to teach Mathematics and Physics in an unnatural manner.

The ability of assessment processes to support valid and reliable judgments of student outcomes

Of all the problem areas for assessment in Queensland this has to be the area of greatest concern. I have seen many submissions for Mathematics B, from schools, over several years. Some schools give excellent submissions and the standards are excellent. Some schools submit work that is highly questionable.

I know, from students who have left school that there is a trade at the University of the Sunshine Coast for university students to do EMPSTs and ERTs and EEs at a price. Professor Ridd refers to parent help and this is sometimes evident. I have asked the question several times whether a correlation test, or equivalent, between supervised assessment and unsupervised assessment would be valuable. The question is always answered as to the “reality” that some students do better on assignment than tests. This does not explain how their language and mathematical ability can be so variant.

There is ample anecdotal evidence that many students are coached specifically on the exam questions when submissions to panel are presented. In Mathematics B there is a place for unfamiliar questions at the simple level in Knowledge and Procedures and a place for unfamiliar at the complex level, as well, in Modelling and Problem solving. The assumption is that students who do well will complete these unfamiliar questions. If the challenged students do well on these questions then they have been rehearsed. This assumes that teachers are honourable and don't just coach the better students in the supposedly unrehearsed questions. There are a lot of teachers around who are not so honourable.

Assessment by criteria leads to another problem. Sometimes specific criteria are omitted from the check lists to suggest better results than are in evidence. Moderation is a busy time and these can easily slip through.

A small externally set exam, administered like NAPLAN, could help ensure the reliability and validity of the assessment of Mathematics and Science as Professor Ridd suggests. It would be the best moderation procedure of all.

The flexibility in assessment in Queensland should be an advantage. Currently it is an area for fraud and corruption. The evidence is there if one looks.

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